0010

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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April 19, 1999

TO: File

THRU: Daron Haddock, Permit Supervisor DRH

FROM: Wayne H. Western, Senior Reclamation Specialist WHW

RE: Midterm Review of the Reclamation Bond Amount, Horizon Mining, LLC, Horizon Mine, ACT/007/020-98MT, File #2, Carbon County, Utah

SUMMARY:

As part of the midterm review the Division calculated the bond for the Horizon Mine. The current bond amount is for $209,195.31. The Division calculated the cost to reclaim the Horizon Mine as it existed on April 2, 1999, to be $1,081,000.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: R645-301-800, et seq.

Analysis:

Determination of bond amount.

The Division reviewed the reclamation cost estimates for the Horizon Mine as part of the midterm. The Division found several deficiencies in the reclamation cost estimate. Those deficiencies include but are not limited to:

The Permittee needs to give the Division detailed earthwork calculations. Those calculations must include haul distances, grades travel times, and material volumes. In addition the Permittee must include a detailed reclamation plan that lists the timing and sequence of all major earthwork activities. (The Permittee should refer to the OSM reclamation handbook for details or consult the Division.)

The Permittee must give the Division detailed demolition costs for all approved structures. The detailed demolition costs must include the type of material used to construct the structure, all concrete associated with the structure (such as floors, footers and foundations) and the disposal costs. The disposal costs must include the dump fee and haulage costs.

The Permittee must also include the disposal costs for the maximum amount of coal mine waste, and high ash coal that will be stored on site. The disposal costs must include haulage costs and dump fees.

The Division calculated the reclamation cost to reclaim the Horizon Mine as it existed on April 2, 1999. The Division determined the reclamation cost to be $1,081,000 in 2001 dollars. See the attached sheets for details. The current bond amount is $209,195.31 in 2000 dollars. Because the reclamation cost exceeds the bond amount by $871,804.69 which is a 417% increase in the current bond the Permittee must increase the reclamation bond immediately. Other adjustments to the bond could occur then the detailed reclamation cost data are approved by the Division.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-830, The Permittee must provide the Division with a detailed reclamation cost estimate for the Horizon Mine. The detailed reclamation cost estimate must include:

Detailed earthwork calculations that include haul distances, grades travel times, and material volumes. In addition the Permittee must include a detailed reclamation plan that lists the timing and sequence of all major earthwork activities. (The Permittee should refer to the OSM reclamation handbook for details or consult the Division.)

Detailed demolition cost calculations that include the type of structures and the disposal costs. The detailed demolition costs must include the type of material used to construct the structure, all concrete associated with the structure (such as floors, footers and foundations) and the disposal costs. The disposal costs must include the dump fee and haulage costs.

The Permittee must also include the disposal costs for the maximum amount of coal mine waste, and high ash coal that will be stored on site. The disposal costs must include haulage costs and dump fees.

R645-301-840, The Permittee must increase the reclamation bond amount from $209,195.31 to $1,081,000.

Bonding Calculations
Horizon Mine - ACT/007/020
Revised April 1999

Bond Summary

Direct Costs	
Subtotal Demolition and Removal	$108,012
Subtotal Backfilling and Grading	$564,900
Subtotal Revegetation	$84,501
Direct Costs	$757,413
Indirect Costs	
Maintenance and Monitoring (10%)	$75,741
Contingency (10%)	$75,741
Engineering Redesign (5%)	$37,871
Startup Costs (5%)	$37,871
Contract Management (5%)	$37,871
Subtotal Indirect Costs	$265,095
Total Cost in 1999 Dollars	$1,022,508
Escalation 3.27% for 2.5 years	$58,226
Total Cost in 2002 Dollars	$1,080,734
Bond Amount (rounded to nearest $1,000)	$1,081,000

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Seal Portals																			
	Structure's Demo. Cost	Seal Portal	AML1	5000	EA										3	EA		3	EA	$15,000
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. steel)																			
	Transport Cost Non-Steel																			
	Disposal Cost Non-Steel																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$15,000
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Floor's Demolition Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Foundation's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Footer's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$15,000

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Temp Office Trailer																			
	Structure's Demo. Cost	Mixture of type Building	020 604 0100	0.25	/CF	50	9	9								FT		4050	CF	$1,013
	Structure's Vol. Demolished																0.35	1418	CF	
	Rubble's Weight (excl. scrap)												100			lb/CF		71	TON	
	Transport Cost Non-Scrap	Dump Truck 16 ton	016 408 5300	8.36	/TON-HR									1		HR		71	TON	$594
	Disposal Cost Non-Scrap	ECDC	ECDC	35	/TON													71	TON	$2,485
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$4,092
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Floor's Demolition Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Foundation's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Footer's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$4,092

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Portal Structures																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	17	57	12								FT		11628	CF	$2,674
	Structure's Vol. Demolished																0.35	4070	CF	
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight												500			lb/CF		1018	TON	
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$2,674
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Concrete Structure	Custom Concrete Demolition 1	CustConDemo1	62	/CY	17	17	2							1	FT		21	CY	$1,302
	Volume (Dimolished)																1.3	27	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													27	CY	$180
	Subtotal																			$1,482
	Concrete Structure	Custom Concrete Demolition 1	CustConDemo1	62	/CY	27	21	2							3	FT		126	CY	$7,812
	Volume (Dimolished)																1.3	164	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													164	CY	$1,091
	Subtotal																			$8,903
	Concrete Structure																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$13,059

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Substation																			
	Structure's Demo. Cost	750 KVA	020 708 1570	995	Ea.										2	EA		2	EA	$1,990
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$1,990
	Equipment's Demolition Cost	Chain Link 8' to 10' high	020 554 0700	2.5	/LF	40	40	6								FT		172	FT	$430
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			$430
	Concrete Structure	Custom Concrete Demolition 1	CustConDemo1	62	/CY	10	10	0.5							2	FT		4	CY	$248
	Volume (Dimolished)																1.3	5	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													5	CY	$33
	Subtotal																			$281
	Concrete Structure	Custom Concrete Demolition 1	CustConDemo1	62	/CY	5	5	0.5							2	FT		1	CY	$62
	Volume (Dimolished)																1.3	1	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													1	CY	$7
	Subtotal																			$69
	Concrete Structure																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$2,770

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Conveyor Mine to Tansfer Pt.																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	110	10	8								FT		8800	CF	$2,024
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$2,024
	Equipment's Demolition Cost	Mechanical equip. heavey	020 718 3600	650	Ton							5				TON		5	TON	$3,250
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			$3,250
	Concrete Structure	Custom Concrete Demolition 1	CustConDemo1	62	/CY	20	2	4							3	FT		18	CY	$1,116
	Volume (Dimolished)																1.3	23	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													23	CY	$153
	Subtotal																			$1,269
	Concrete Structure																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Concrete Structure																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$6,543

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Transfer Belt																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	400	10	10								FT		40000	CF	$9,200
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$9,200
	Equipment's Demolition Cost	Mechanical equip. heavey	020 718 3600	650	Ton							5				TON		5	TON	$3,250
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			$3,250
	Concrete Structure	Custom Concrete Demolition 1	CustConDemo1	62	/CY	20	2	4							8	FT		47	CY	$2,914
	Volume (Dimolished)																1.3	61	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													61	CY	$406
	Subtotal																			$3,320
	Concrete Structure																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Concrete Structure																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$15,770

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Stacker Belt																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	230	10	20								FT		46000	CF	$10,580
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$10,580
	Equipment's Demolition Cost	Mechanical equip. heavey	020 718 3600	650	Ton							5				TON		5	TON	$3,250
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			$3,250
	Concrete Structures	Custom Concrete Demolition 1	CustConDemo1	62	/CY	20	2	4							2	FT		12	CY	$744
	Volume (Dimolished)																1.3	16	CY	
	Transport Cost																			
	Disposal Fee	On Site Disposal	020 554 5550	6.65	/CY													16	CY	$106
	Subtotal																			$850
	Concrete Structures																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Concrete Structures																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$14,680

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Fuel Tank																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	15			5							FT		295	CF	$68
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			$68
	Subtotal																			
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Floor's Demolition Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Foundation's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Footer's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
																				$68
	Total																			

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Portal Tank																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	23			10							FT		1806	CF	$415
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$415
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Floor's Demolition Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Foundation's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Footer's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$415

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Explosive Storage																			
	Structure's Demo. Cost	Steel Building	020 604 0012	0.23	/CF	4	2	3							2	FT		48	CF	$11
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$11
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Floor's Demolition Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Foundation's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Footer's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Total																			$11

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Culvert Removal																			
	18" Culvert Removal	18" diameter	027 164 2600	9.47	/LF	150										FT		150	FT	$1,421
	36" Culvert Removal	36" diameter	027 164 2660	20.6	/LF	771										FT		771	FT	$15,883
																				$17,304
	Total																			$17,304

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	General Cleanup																			
	Structure's Demo. Cost	General Cleanup	OSM002	2000	/AC					9.15						AC		9.15	AC	$18,300
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. scrap)																			
	Transport Cost Non-Scrap																			
	Disposal Cost Non-Scrap																			
	Steel's Weight																			
	Transport Cost Steel																			
	Disposal Cost Steel																			
	Subtotal																			$18,300
	Equipment's Demolition Cost																			
	Dismatle Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Paving's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Fee																			
	Subtotal																			
	Foundation's Demo. Cost																			
	Volume (Dimolished)																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Footer's Demo. Cost																			
	Transport Cost																			
	Disposal Cost																			
	Subtotal																			
	Total																			$18,300

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE NUMBER	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	DIA.	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
	Seal Portals																			$15,000
	Temp Office Trailer																			$4,092
	Portal Structures																			$13,059
	Substation																			$2,770
	Conveyor Mine to Tansfer Pt.																			$6,543
	Transfer Belt																			$15,770
	Stacker Belt																			$14,680
	Fuel Tank																			$68
	Portal Tank																			$415
	Explosive Storage																			$11
	Culvert Removal																			$17,304
	General Cleanup																			$18,300
	Bathhouse A																			$0
	Bathhouse B																			$0
	Parts Trailer																			$0
	Storage Trailer																			$0
	Shop																			$0
	Shop Tank																			$0
	Crusher Bld.																			$0
	Total																			$108,012

	Eq. Costs	Hours Rental Period	Hourly Eq. Costs	Hourly Oper. Costs	Eq. & Mat. O.H.	Oper. Hourly Rate	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Remove High Ash Coal/Waste Material																
Truck, dump, tandem, 12 ton payload	3300	176	16.9	17	0.1	33.3	12.00	847.08	/HR	14000	CY	60.00	CY/HR	233.00	HR	$197,370
966F Series II EROPS (9-28) (04/98)	6555	176	37.24	21.2	0.1	41.9	1.00	106.18	/HR					233.00	HR	$24,740
Pickup Truck 4 wh	720	176	4.09	11.71	0.1	0	1.00	17.38	/HR					233.00	HR	$4,050
Foreman Average, Outside						44.70	1.00	44.70	/HR					233.00	HR	$10,415
Common Building Laborers						31.60	1.00	31.60	/HR					233.00	HR	$7,363
Subtotal																$243,938

	Eq. Costs	Hours Rental Period	Hourly Eq. Costs	Hourly Oper. Costs	Eq. & Mat. O.H.	Oper. Hourly Rate	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Earthwork Costs																
Truck, dump, tandem, 12 ton payload	3300	176	16.9	17	0.1	33.3	3.00	211.77	/HR	16300	CY	36.00	CY/HR	453.00	HR	$95,932
966F Series II EROPS (9-28) (04/98)	6555	176	37.24	21.2	0.1	41.9	1.00	106.18	/HR					453.00	HR	$48,100
D9R Semi-U EROPS (9-45) (04/98)	16135	176	91.68	46.25	0.1	41.9	1.00	193.62	/HR					453.00	HR	$87,710
140H EROPS (9-2) (04/98)	5190	176	29.49	15.4	0.1	41.9	1.00	91.28	/HR					29.00	HR	$2,647
Cat. 325 1994 (10/4) (06/98)	8040	176	45.68	21.3	0.1	41.9	1.00	115.58	/HR					160.00	HR	$18,493
Foreman Average, Outside						46.3	1.00	46.30	/HR					453.00	HR	$20,974
CLAB						32.5	1.00	32.50	/HR					453.00	HR	$14,723
Pickup Truck 4 wh	720	176	4.09	11.71	0.1	0	1.00	17.38	/HR					453.00	HR	$7,873
4,000 gal H2O truck Diesel (20-6) (8/98)	3130	176	17.78	13.65	0.1	0	1.00	34.57	/HR					453.00	HR	$15,660
Survey Crew , 3 Man								885	/DAY					10.00	DAy	$8,850
Subtotal																$320,962

	Eq. Costs	Hours Rental Period	Hourly Eq. Costs	Hourly Oper. Costs	Eq. & Mat. O.H.	Oper. Hourly Rate	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Remove High Ash Coal/Waste Material																243938.00
Earthwork Costs																320962.00
Total																564900.00

MAP REF.	DESCRIPTION	MATERIALS	MEANS REFERENCE	UNIT COST	UNIT	LENGHT	WIDTH	HEIGHT	AREA	VOL.	WEIGHT	DEN.	TIME	#	UNIT	SWELL FAC.	QUANTITY	UNIT	COST
	Revegetation																		
	Soil Roughening	75 HP Dozerw/scarifiers	029 204 3100	3.34	MSF				9.15						ACRE		399	MSF	$1,333
	Seed Mix	Clover .67lb/MSF push s	029 308 1500	36.5	MSF				9.15						ACRE		399	MSF	$14,564
	Seed Spreading	Clover .67lb/MSF Hydros	029 308 1700	35.5	MSF				9.15						ACRE		399	MSF	$14,165
	Straw Mulch	Hay, 1" deep, power mul	029 516 0350	22	MSF				9.15						ACRE		399	MSF	$8,778
	Fertilizer	Water Soluable, hydro sp	029 720 0180	2.13	MSF				9.15						ACRE		399	MSF	$850
	Seedings, Bare Root	Bare root seedlings, 17"	029 521 0713	2.67	Ea				9.15					3660	Each		3660	Ea.	$9,772
	Silt Fence	Silt fence, polypropylene	022 704 1100	0.88	LF	6800									FT		6800	FT	$5,984
	Protective Fence	Chicken wire, posts, 2" m	028 320 0100	5.5	LF	2210									FT		2210	FT	$12,155
	Subtotal																		$67,601
	Reseeding																		$16,900
	Reseeding 25%																		
	Subtotal																		$16,900
	Total																		$84,501